Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

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304.11 - **Question:** Are new guards required to be installed when replacing existing rooftop HVAC equipment in the same location with new equipment and no guards are present and none were required when the equipment was originally installed?

Answer: No, the requirements for guards for existing equipment locations is governed by the code that was in effect at the time of the initial installation of the existing HVAC equipment. If existing equipment is replaced with new equipment in the same location, the location is unchanged and the requirements for guards continue to be dictated by the requirements of the prior code. If the new

equipment is relocated to a different location, then the requirements for guards shall be as required by Section 304.11

305.4 - Question: Does the Code require that hangers be placed a specific distance apart when installing line sets (AC/Refrigeration) and if so, what distance?

Answer: Section (table) 305.4 of the Mechanical Code states that "piping (1 ¼ inch and smaller) be supported every 6 feet horizontally and every 10 feet vertically.

306.5 - Question: Would solar panels installed on a roof that is over 16 feet in height require an access ladder when solar panels would not require periodic maintenance?

Answer: No, the key phrase is periodic maintenance. Section 306.5 states equipment and appliances requiring periodic maintenance installed on roofs over 16 feet require permanent means of access.

306.5 Equipment and appliances on roofs or elevated structures. Where equipment and appliances requiring periodic maintenance are installed on roofs or elevated structures at a height exceeding 16 feet (4877 mm), such access shall be provided by a permanent approved means of access, the extent of which shall be from grade or floor level to the equipment and appliances' level service space. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) high or walking on roofs having a slope greater than four units vertical in 12 units horizontal (33-percent slope). Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall.

306.5 - Question: I am installing a furnace in the attic of a church, a new installation, and the ceiling height it 18 feet. I was told I would need to install a permanent ladder for access. Is this true? Section 306.5 only deals with roof installation.

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Answer: Section 306.5 provides requirements for roof installations and installations on elevated structures. It is rare to have a ceiling height greater than 16 feet and not have attic access from a stair, ladder or balcony. If the access point is over 16 feet, then a permanent means of access would be required.

306.5 Equipment and appliances on roofs or elevated structures. Where equipment and appliances requiring periodic maintenance are installed on roofs or elevated structures at a height exceeding 16 feet (4877 mm), such access shall be provided by a permanent approved means of access, the extent of which shall be from grade or floor level to the equipment and appliances' level service space. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) high or walking on roofs having a slope greater than four units vertical in 12 units horizontal (33-percent slope). Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall

307 - Question: What is the proper size of a condensate line connecting multiple condensate drains into a single header?

Answer: Residential (3 to 5 tons)

- Increase pipe size each time you add additional unit up to 1 ½ inch pipe size.

Commercial

- Increase pipe size each time you add additional unit up to 2 inch pipe size.

Example: 3 units are to be manifolded together. After the first 2 are combined, the pipe size will increase to 1 inch. After the third is tied in, the pipe size will increase to 1 1/4 inch.

307.2.3 - Question: Is a float switch or auxiliary pan required for an air handler sitting on a wood floor?

Answer: Yes, Section 307.2.3 requires an auxiliary system where damage to the building components could occur. This can be accomplished with any of the 4 options in 307.2.3.

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307.2.3 Auxiliary and secondary drain systems. In addition to the requirements of Section 307.2.1, where damage to any building components could occur as a result of overflow from the equipment primary condensate removal system, one of the following auxiliary protection methods shall be provided for each cooling coil or fuel-fired appliance that produces condensate:

1. An auxiliary drain pan with a separate drain shall be provided under the coils on which condensation will occur. The auxiliary pan drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The pan shall have a minimum depth of 11/2 inches (38 mm), shall not be less than 3 inches (76 mm) larger than the unit or the coil dimensions in width and length and shall be constructed of corrosion-resistant material. Galvanized sheet steel pans shall have a minimum thickness of not less than 0.0236 inch (0.6010 mm) (No. 24 gage). Nonmetallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm).

2. A separate overflow drain line shall be connected to the drain pan provided with the equipment. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection.

3. An auxiliary drain pan without a separate drain line shall be provided under the coils on which condensate will occur. Such pan shall be equipped with a water-level detection device conforming to UL 508 that will shut off the equipment served prior to overflow of the pan. The auxiliary drain pan shall be constructed in accordance with Item 1 of this section.

4. A water-level detection device conforming to UL 508 shall be provided that will shut off the equipment served in the event that the primary drain is blocked. The device shall be installed in the primary drain line, upstream of the primary drain line trap, the overflow drain line, or in the equipment-supplied drain pan, located at a point higher than the primary drain line connection and below the overflow rim of such pan.

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307.2.2 - Question: Is PVC condensate piping required to be primed and glued?

Answer: Yes, Section 307.2.2 refers to Chapter 7 of the plumbing code for joints and connections, which does require PVC joints to be primed and glued.

307.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polybutylene, polyethylene, ABS, CPVC or PVC pipe or tubing. All components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 of the International Plumbing Code relative to the material type. Condensate waste and drain line size shall be not less than 3/4-inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal.

Plumbing Code Reference:

705.14 PVC plastic. Joints between PVC plastic pipe or fittings shall comply with Sections 705.14.1 through 705.14.3.

705.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer or an ultraviolet purple primer that conforms to ASTM F 656 shall be applied. When an ultraviolet primer is used, the installer shall provide an ultraviolet light to the inspector to be used during the inspection. Solvent cement not purple in color and conforming to ASTM D 2564, CSA-B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces.

The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent-cement joints shall be permitted above or below ground.

400 Chapter 4 Ventilation

403.3 - Question: Is an exhaust fan required in a bathroom that only has a lavatory installed in it?

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Answer: No, if the room only has a lavatory then it is neither a toilet room nor a bathroom and would not require exhaust per Table 403.3

BATHROOM. A room containing a bathtub, shower, spa or similar bathing fixture.

TOILET ROOM. A room containing a water closet and, frequently, a lavatory, but not a bathtub, shower, spa or similar bathing fixture.

403.3 - Question: Can a ductless (Charcoal Filter) exhaust fan be installed in a half bath (lavatory and water closet only)?

Answer: No, this would be a toilet room and would be require to provide exhaust per Table 403.3

403.3 - Question: How are Hookah and Vapor Lounges classified for ventilation?

Answer: Hookah and Vapor Lounges are classified as Smoking Lounges for ventilation purposes.

403.9 - Question: I am being told that I cannot use the coupling that comes with the gas pipe, why is this?

Answer: Section 403.9 requires metallic pipe and fitting threads to be tapered. These merchant couplings are straight threads and are used to protect the threads during shipping. A standard black steel coupling is made of malleable steel, where the merchant couplings are made from steel tubing and can split. 403.9 Metallic pipe threads. Metallic pipe and fitting threads shall be taper pipe threads and shall comply with ASME B1.20.1

500 Chapter 5 Exhaust Systems

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501.2.1 - Question: I am installing a dryer vent on a single family house. There is an intake for make up air to the range hood. How far do I need to be away from the intake, I have been told both 3 and 10 feet.

Answer: Dryer exhaust is considered environmental air. The clearance is 3 feet for building openings. There is a requirement of a 10 foot clearance for mechanical intakes, but we do not consider these make up air intakes as mechanical intakes for the following:

1. They are used intermediately
2. They have a damper than closes when not in use.
3. The air that is pulled in, is immediately exhausted back out.

502.14 - Question: Section 502.14 NCMC requires a source capture system where stationary motor vehicles are operated. What are the termination requirements for this system?

Answer: Section 501.2.1 provides the requirements for various types of exhaust. The exhaust from a source capture would not be considered flammable, nor would it be considered environmental air. Therefore source capture exhaust outlets would have to comply with 501.2.1 #2.

10 feet from property lines
3 feet from exterior walls and roofs
10 feet from operable openings into buildings
10 feet above adjoining grade

501.2.1 Location of exhaust outlets. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:

1. For ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet (9144 mm) from property lines; 10 feet (3048 mm) from operable openings into buildings; 6 feet (1829 mm) from exterior walls and roofs; 30 feet (9144 mm)

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from combustible walls and operable openings into buildings which are in the direction of the exhaust discharge; 10 feet (3048 mm) above adjoining grade.

2. For other product-conveying outlets: 10 feet (3048 mm) from the property lines; 3 feet (914 mm) from exterior walls and roofs; 10 feet (3048 mm) from operable openings into buildings; 10 feet (3048 mm) above adjoining grade.

3. For all environmental air exhaust: 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable openings into buildings for all occupancies other than Group U, and 10 feet (3048 mm) from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious.

4. Exhaust outlets serving structures in flood hazard areas shall be installed at or above the design flood level.

5. For specific systems see the following sections:

5.1. Clothes dryer exhaust, Section 504.4.

5.2. Kitchen hoods and other kitchen exhaust equipment, Sections 506.3.12, 506.4 and 506.5.

5.3. Dust stock and refuse conveying systems, Section 511.2.

5.4. Sub slab soil exhaust systems, Section 512.4

5.5. Smoke control systems, Section 513.10.3

5.6. Refrigerant discharge, Section1105.7

5.7. Machinery room discharge, Section 1105.6.1

504.5 - Question: I have a laundry room that is bigger than a closet, am I still required to provide make up air?

Answer: It will depend on the laundry room size. If it meets the requirements of R304.3 for minimum habitable room dimensions, then make up air would not be

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required. If the room does not meet the minimum dimensions, then it would be required per 504.5 NCMC.

R304.3 Minimum dimensions. Habitable rooms shall not be less than 7 feet in any horizontal dimension.

504.5 Makeup air. Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 square inches (0.0645 m2) shall be provided in the closet enclosure or makeup air shall be provided by other approved means.

504.6.7 - Question: Are shield plates required for dryer vents?

Answer: Yes, Section 504.6.7 requires plates if the dryer exhaust duct is closer than 1.25 inches to the face of the framing member. The intent here is to prevent a nail from penetrating the duct and providing place for lint to accumulate.

504.6.7 Protection required. Protective shield plates shall be placed where nails or screws from finish or other work are likely to penetrate the clothes dryer exhaust duct. Shield plates shall be placed on the finished face of all framing members where there is less than 11/4 inches (32 mm) between the duct and the finished face of the framing member. Protective shield plates shall be constructed of steel, have a thickness of 0.062 inch (1.6 mm) and extend a minimum of 2 inches (51 mm) above sole plates and below top plates

504.6.5 - Question: I was turned down for not having a permanent label stating the length of the dryer duct, but I did not exceed the 35 feet. Isn't the label only if you go over what code allows?

Answer: In the 2009 NCMC the requirement for a label was an exception to the maximum dryer exhaust length, providing the manufacture supported the length. In the 2012 NCMC, the label requirement was moved to a stand alone section and is a requirement for all dryer exhaust installations.

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504.6.5 Length identification. The equivalent length of the exhaust duct shall be identified on a permanent label or tag. The label or tag shall be located within 6 feet (1829 mm) of the exhaust duct connection.

504.7 - Question: What are the venting requirements for a Type 2 dryer?

Answer: Most of the venting requirements will be per the manufacture's installation instructions. However there a few requirements per Section 504.7 NCMC.

1. Exhaust fan motors installed in the exhaust system shall be outside of the air stream
2. When multiple dryers are manifolded together, the fan shall run continuously or be interlocked to operate when any individual unit is operating.
3. Ducts shall have a minimum clearance of 6 inches
4. Transition ducts connecting the appliance to the exhaust system shall not exceed 8 feet
5. Transition ducts shall be listed and labeled for the application
6. Transition ducts shall not be concealed within construction

504.7 Commercial clothes dryers. The installation of dryer exhaust ducts serving Type 2 clothes dryers shall comply with the appliance manufacturer's installation instructions. Exhaust fan motors installed in exhaust systems shall be located outside of the airstream. In multiple installations, the fan shall operate continuously or be interlocked to operate when any individual unit is operating. Ducts shall have a minimum clearance of 6 inches (152 mm) to combustible materials. Clothes dryer transition ducts used to connect the appliance to the exhaust duct system shall be limited to single lengths not to exceed 8 feet (2438 mm) in length and shall be listed and labeled for the application. Transition ducts shall not be concealed within construction.

505.1 - Question: Are plastic wall hoods allowed on residential kitchen exhaust?

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Answer: Yes, Section 505.1 states the duct itself has to be metal, the hood is not addressed. We have consulted with NCDOI and they have no issues with the use of plastic wall hoods on residential kitchen exhaust. The following are the reasoning for the interpretation:

- The hood is outside the home, the tail or connection piece is aluminum
- Residential range hood exhaust does have small amounts of grease, but it is not considered a grease duct
- The main purpose for the exhaust systems are to remove moisture and odors, they are considered environmental air
- They will remove some heat, but the temperature of the air being moved in the duct will not be significant, as the system will be pulling in ambient air from around the range

505.1 Domestic systems. Where domestic range hoods and domestic appliances equipped with downdraft exhaust are located within dwelling units, such hoods and appliances shall discharge to the outdoors through sheet metal ducts constructed of galvanized steel, stainless steel, aluminum or copper. Such ducts shall have smooth inner walls and shall be air tight and equipped with a backdraft damper.

505.2 - Question: It was my understanding that I could go up to 600 cfm on domestic kitchen hoods before I had to provide makeup air, but I was told I had to provide it because the house had a fireplace. Is this correct?

Answer: Yes, there was a code change that allows domestic exhaust hoods that do not exceed 600 cfm to be installed without providing makeup air. There is a stipulation, all the appliance in the house have to be direct-vent, power-vent, unvented or electric. The fireplace is not a direct vent.

See attached code reference and flow chart.

507.9 - Question: Why is PVC in the wall still counted as a combustible behind a Type I hood?

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Answer: Per NCDOI (Dan Dittman), they interpret it the same way we do. Combustibles must be 18 inches from the hood, the sheetrock does not reduce the clearance requirements. The only ways to reduce the 18 inches is to use Table 308.6 NCMC or have a reduced clearance hood.
507.9 Clearances for Type I hood. A Type I hood shall be installed with a clearance to combustibles of not less than 18 inches (457 mm).

600 Chapter 6 Duct Systems

602.1 - Question: I have a customer that wants to install a gas furnace above the ceiling in their space, but the above ceiling is a return air plenum. He said they did the same thing at their other stores, how can this be done?

Answer: Section 602.1, prohibits the installation of fuel-fired appliances from being install in a plenum. A common practice is to locate the furnace over a bathroom area and take the walls of the bathroom up to the deck above. Then simply duct from the furnace over to and through the wall. This takes the furnace out of the plenum and still provides an above ceiling plenum.
602.1 General. Supply, return, exhaust, relief and ventilation air plenums shall be limited to uninhabited crawl spaces, areas above a ceiling or below the floor, attic spaces and mechanical equipment rooms. Plenums shall be limited to one fire area. Fuel-fired appliances shall not be installed within a plenum.

603.18 - Question: Are you required to have a return on each level of a multi-story dwelling?

Answer: Yes, for non-engineered systems in a multi-story dwelling, a return is required on each level.

603.18 - Question: When are you required to have more than one return in a single story dwelling?

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Answer: For non-engineered systems, you are required to have an additional return when you exceed 1600 sq ft.

603.6.1 - Question: I was turned down for using aluminum flex for the make up air duct on my factory built fire place. The manufacture instructions just states to use flex. Why was I turned down?

Answer: Section 603.6.1 NCMC states flexible air ducts, both metallic and nonmetallic must be tested in accordance with UL181. It appears there are several manufacturers of this flexible aluminum duct, which has not been tested in accordance with UL181.

603.7 - Question: Can fire dampers be used in a residential garage supplied with air from outside the area where cars are parked?

Answer: No, Section 603.7 prohibits the openings into the garage. The separation of the garage is one issue the other is the transfer of CO or other fumes from the garage to the living space, which a fire damper cannot offer protection.
603.7 Rigid duct penetrations. Duct system penetrations of walls, floors, ceilings and roofs and air transfer openings in such building components shall be protected as required by Section 607. Ducts in a private garage and ducts penetrating the walls or ceilings separating a dwelling unit from a private garage shall be continuous and constructed of a minimum 26 gage [0.0187 inch (0.4712 mm)] galvanized sheet metal or other approved noncombustible material and shall not have openings into the garage. Fire and smoke dampers are not required in such ducts passing through the wall or ceiling separating a dwelling unit from a private garage except where required by Chapter 7 of the International Building Code.

604.1 - Question: I am replacing a unit in the crawl space. I will be reusing the existing ductwork, but it is not insulated. Am I required to insulate it?

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Answer: No, Section 604.1 states replacement of units in a crawl space does not require the ductwork to be insulated. Replacement of units in the attic will require the ductwork to be insulated.

604.1 General. Duct insulation shall conform to the requirements of Sections 604.2 through 604.13 and the International Energy Conservation Code. Replacement or addition of cooling equipment to existing ductwork located in an attic shall require the ductwork to be insulated. Replacement of heating or the addition of cooling equipment in a crawl space shall not require the existing ductwork to be insulated.

604.3 - Question: I am designing a building where ductwork will be outside the building on the roof. I know it will have to be insulated to an R-8, but are there any smoke for flamespread requirements? I was wanting to use a ridged foam board and wrap that in aluminum.

Answer: If the insulation is outside the building, there is no smoke for flame spread requirements. Section 604.3 doesn't specify interior or exterior, but after researching the code section. The intent is for ducts with in the building.

604.3 Coverings and linings. Coverings and linings, including adhesives when used, shall have a flame spread index not more than 25 and a smoke-developed index not more than 50, when tested in accordance with ASTM E 84 or UL 723, using the specimen preparation and mounting procedures of ASTM E 2231. Duct coverings and linings shall not flame, glow, smolder or smoke when tested in accordance with ASTM C 411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250ºF (121ºC)

700 Chapter 7 Combustion Air

800 Chapter 8 Chimneys & Vents

900 Chapter 9 Specific Appliances

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1000 Chapter 10 Boilers & Water Heaters

1100 Chapter 11 Refrigeration

1200 Chapter 12 Hydronic Systems

1300 Chapter 13 Fuel Oil Piping

1400 Chapter 14 Solar Systems

Policy - Question: Why can I not terminate the dryer vents in the breezeway of the apartments? It is outside the building.

Answer: Section 504.4 states the dryer exhaust "shall terminate outside of the building". The breezeway is under roof and by the definition in the NCBC, is considered part of the building area. Our policy requires dryer vents and exhaust terminations be outside of the building. Examples are breezeways, balconies above, loading docks, etc.

AREA, BUILDING. The area included within surrounding exterior walls (or exterior walls and fire walls) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above.

504.4 Exhaust installation. Dryer exhaust ducts for clothes dryers shall terminate on the outside of the building and shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination. Ducts shall not be connected or installed with sheet metal screws or other fasteners that will obstruct the exhaust flow. Clothes dryer exhaust ducts shall not be connected to a vent connector, vent or chimney. Clothes dryer exhaust ducts shall not extend into or through ducts or

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plenums.

Policy - Question: I want to use a Rational Oven in my restaurant, what kind of hood is required?

Answer: Rational Ovens have been tested and evaluated, they emit little to no grease. Since they only produce heat and steam, a Type II hood is acceptable for these ovens. When combined with a Rational UltraVent Condensation Hood, they would be exempt from a Type I and Type II hood.
See interpretation

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Policy - Question: Are plans required to replace a Type I hood?

Answer: Unless the replacement is the exact size and model as the one being replaced, it would require plans. Changing the size of the hood will change the amount of air, the velocity of the air and the performance of the hood.

Policy - Question: What are the permit requirements for installing a PTAC unit?

Answer: John Todaro with the State Board of Examiners of Plumbing and Heating Contractors, has confirmed there is no license requirements for the installation of a PTAC unit for single family. For commercial they count toward the total building cooling load which will determine the class of license required.
With no license requirements for single family, the minimum permits required for a new installation for single family is a Building permit for cutting the hole in the wall and installation of the header; and an electrical permit if a new circuit has to be run for the unit.
There is an issue when someone wants to count the space as heated square footage. To count the space as heated square footage, a mechanical permit must be issued to document a permanent heat source. Most of the time, these PTAC units are installed by HVAC companies, therefore we are giving an OPTION of pulling a mechanical permit if the homeowner wants the space classified as heated. The contractor will affirm the unit is sized properly for the space and this will be documented with the mechanical permit

Policy - Question: Who looks at factory built fire places? The Building Inspector or the Mechanical Inspector?

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Answer: Both will look at it. The Building Inspector will inspect the unit for clearances to combustibles and the Mechanical Inspector will inspect the vent, combustion air (if applicable) and the gas line (if applicable).

Policy - Question: What is the minimum depth allowed for a return box with a filter grill?

Answer: There needs to be at least 12" depth measured from the back of the filter grill and the back of the box where the starting collar is connected. Depths less than the 12" would create excessive turbulence and would not meet SMACNA standards.
This has been our policy since atleast 2002, can be found in the 2002 Q&A

Policy

Other

Energy Code (403.2.2 NCECC and N1103.2.2 NCRC) - Question: Is there a code requiring the line set and drain penetration on an airhandler to be sealed? The installation instructions does not address it.

Answer: Yes, NCECC Section 403.2.2 and NCRC Section N1103.2.2 require all ducts, air handlers, filter boxes, and building cavities used as ducts to be sealed. There are exceptions for the leak testing on a partial replacement, but not the requirement of sealing.
403.2.2 Sealing (Mandatory Requirements). All ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed. Joints and seams shall comply with Part V–Mechanical, Section 603.9 of the North Carolina residential Code.

Energy Code (403.1.1 NCECC/N1103.1.1 NCRC) - Question: Does a heat pump require a programmable thermostat? If NOT why?

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Answer: No, per NCDOI informal interpretation:
The forced air-furnaces subject to the requirements of 403.1.1 are oil-fired furnaces, electric furnaces (strip heat only), solid fuel furnaces, and fuel-gas furnaces. As heat pumps have their own definition (see definitions, NCMC chapter 2, furnace, heat pump), the more specific requirement of section 403.1.2 shall apply to a heat pump.

Other - Question: Is it permissible to route refrigerant or condensate line in a residential elevator shaft? (single family)

Answer: We cannot find any code that prohibits routing refrigerant or condensate lines in a elevator shaft in a single family home. If the manufacturer of the elevator doesn't prohibit it, then we see no reason it would not be allowed.

Other - Question: I have been told that I cannot use the self adhesive labels for gas piping with counter strike CSST, why?

Answer: The manufacturer of counter strike does not allow the use of self adhesive labels, it counter acts the jacket and produces a point of concentration for electrical surges, instead of dispersing them. The manufacture requires the use of special metal tags for use with counter strike.

Manufacture's Installation Instructions - Question: I installed a GE 6 burner residential range. I was turned down for not having a backguard installed. Where in the code is this requirement?

Answer: The requirement for a backguard comes solely from the manufacture's installation instructions. Some require a backguard in all installations, others only on certain models and others it is optional.

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1600 - Question: Can you install a humidifier in a system made from ductboard?

Answer: Yes, if the manufacture of the humidifier doesn't state otherwise. Most manufacturer's have a detail for this type of installation.

Other - Question: Are you allowed in a restaurant to cook at the table on a propane camping stove?

Answer: No, these stoves are listed for outdoor use.

Building Code - Question: Is the use of pre manufactured foam blocks allowed to support air handlers in the pan?

Answer: Currently the answer is no. To be used in the building, foam plastic is required to have a flame spread index of not more than 75 and a smoke develop of not more than 450. The code language is consistent in both the IBC section 2603.3 and IRC section R316.3

2603.3 Surface-burning characteristics. Unless otherwise indicated in this section, foam plastic insulation and foam plastic cores of manufactured assemblies shall have a flame spread index of not more than 75 and a smoke-developed index of not more than 450 where tested in the maximum thickness intended for use in accordance with ASTM E 84 or UL 723. Loose fill-type foam plastic insulation shall be tested as board stock for the flame spread and smoke-developed indexes.

Manufacture's Installation Instructions - Question: Can a 90% furnace vent terminate under a deck?

Answer: It will depend on what the manufacture states in the installation instructions. Most manufacturers address a termination under a deck, porch or balcony. Some allow it and some do not.

Energy Code 503.2.7 NCECC - Question: Are ducts located in an above ceiling plenum required to be insulated?

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Answer: Yes, unless the ductwork meets one of the exceptions to 503.2.7. The first one is insulation located in the equipment. The second exception is where there is not more than a 15 degree difference between the interior and exterior of the duct.

503.2.7 Duct and plenum insulation and sealing. All supply and return air ducts and plenums shall be insulated with a minimum of R-5 insulation when located in unconditioned spaces and a minimum of R-8 insulation when located outside the building. When located within a building envelope assembly, the duct or plenum shall be separated from the building exterior or unconditioned or exempt spaces by a minimum of R-8 insulation.

Exceptions:

1. When located within equipment.

2. When the design temperature difference between the interior and exterior of the duct or plenum does not exceed 15°F (8°C).

1600 - Question: What is required to install a grill on a covered porch?

Answer: Grills installed outside under a covered area will have to meet the manufacturer's installation instructions. Everyone we have seen also requires a hood matched to the grill being used.

We have had questions from contractors regarding what kind of gas grills/hoods may be placed under a covered porch or veranda. While we cannot tell them what kind or brand they must use, we must tell them that the installation must meet the Manufacturer's installation instructions. We will not pass a gas grill/hood installation where we did not see the wall construction around that device, this is no different than a prefab fire place, we have to see clearances to combustibles to it as well. I am getting calls that all we are seeing on Rough is a gas line stub out- we need to document this carefully to show exactly what we saw and when. If it is apparent that there will be a gas grill going in, we should document that and let the mechanical contractor know that we are holding him

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responsible for the correct appliance installation and instructions for same- if they need another rough inspection to take care of this, it is their responsibility to call it in. If he says he is not responsible for the grill, make a note of same in your permit notes, and let the GC know that a separate permit must be pulled to cover these appliances- and we will not final the mechanical permit until you have confirmed responsibility. The bottom line is, someone is going to be responsible for the correct installation of these appliances. If you go out on a final, and the grill/hood is set, you must be able to see the installation instructions, and confirm it was installed per same. If it is not set, and just a gas stub out is there, document that as well for your protection. We must not assume someone else looked at the framing/installation for this particular grill/hood. We will discuss this in Mechanical Consistency meeting….thanks

William W. Spidel Jr.

Inspections Supervisor

Other - R303.3 - <u>Question:</u> Can I use a window in lieu of a bath fan in a residential bathroom?

<u>Answer:</u> Yes in a single family, two-family or townhouse; you are allowed to use a minimum of a 3 square foot window, which one-half must be openable.

R303.3 Bathrooms. Bathrooms, water closet compartments and other similar rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet, one-half of which must be openable.

Exception: The glazed areas shall not be required where artificial light and an mechanical ventilation system are provided. The minimum ventilation rates shall be 50 cubic feet per minute for intermittent ventilation or 20 cubic feet per minute for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside.